

# Exhibit 6

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

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In Re: Methyl Tertiary Butyl Ether ("MTBE")  
Products Liability Litigation

Master File No. 1:00-1898  
MDL 1358 (SAS)  
M21-88  
ECF Case

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**This document relates to the following case:**

*City of New York v. Amerada Hess Corp., et al.*  
Case No. 04 Civ. 3417

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**PROPOSED EXPERT REPORT OF KENNETH M. RUDO**

I, Kenneth M. Rudo, declare the following to a reasonable degree of scientific certainty:

1. I am a North Carolina State Environmental Toxicologist responsible for performing human risk assessments for the protection of public health from exposure to chemicals in groundwater, soil and air, including private and public drinking water wells. I have been performing this public service function for my state for over 20 years. A copy of my curriculum vitae summarizing my qualifications is attached hereto and incorporated herein as Exhibit A.

2. The human health risk assessments I perform as an environmental toxicologist for the State of North Carolina involve determination of the degree of both short- and long-term health risks for cancer and non-cancerous illnesses and conditions. In performing these risk assessments, I utilize techniques based on commonly and generally accepted scientific principles in the field of toxicology to calculate the level of exposure from ingestion, dermal absorption and inhalation of chemicals in the home. My methodology includes the use of established United

States Environmental Protection Agency (“EPA”) Exposure Factors, peer-reviewed scientific literature, and actual contaminant concentrations present in drinking water.

3. In formulating my opinions and preparing this report, I have relied upon my experience in the fields of toxicology and public health and my review of the medical and scientific literature addressing methyl tertiary butyl ether or “MTBE.” A list of the references upon which I rely is attached hereto as Exhibit B and is incorporated herein.

4. MTBE is considered a possible, if not probable, human carcinogen and is a known animal carcinogen. Animal studies indicate many different tumors associated with MTBE that may also occur in humans. The animal studies indicate that certain cancers, such as leukemia and lymphoma, can arise from exposure to MTBE via pathways compatible with those associated with drinking water. These cancers are malignant endpoints that may arise from exposure to MTBE for a less than lifetime exposure duration. The animal studies also identify testicular tumors, hepatocellular (liver) adenomas and carcinomas, and renal tubular adenomas and carcinomas as being associated with exposure to MTBE. Given the results of these studies and in the absence of epidemiological evidence of MTBE’s effects on humans, and the fact that there is some evidence of MTBE being a potential mutagenic compound, there is no known safe level of exposure to MTBE.

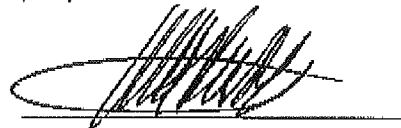
5. It is my opinion that, even at low levels, MTBE in drinking water may pose an increased cancer risk to a reasonable degree of scientific probability and certainty. In addition to the increased cancer risk from ingestion of MTBE-contaminated water, bathing and showering may also pose an increased cancer risk via dermal exposure and inhalation of MTBE-laden vapors and mist. The combination of all these pathways of exposure increases the overall cancer

risk and may actually more than double the risk from ingestion of MTBE-contaminated drinking water alone.

6. Because no human studies currently exist regarding the long-term exposure to low levels of MTBE, the approach most protective of public health must include testing for the levels of MTBE in monitoring and supply wells of the area by regular sampling and analysis and providing granular activated carbon filtration units on all MTBE contaminated drinking water wells within the plume.

I declare under penalty of perjury that the foregoing is true and correct.

Dated: Chapel Hill, North Carolina 8/13/09

A handwritten signature in black ink, appearing to read 'Kenneth M. Rudo', is written over a horizontal line.

Kenneth M. Rudo

**Exhibit A**

**Curriculum Vitae**

**Name:** Kenneth Mark Rudo

**Date and Place of Birth:** August 24, 1955 – Baltimore, Maryland

**Citizenship:** United States

**Marital Status:** Married

**Address:** 1005 Brendan Court, Chapel Hill, NC 27516

**Education:** B.S., Entomology, University of Maryland, 1978  
M.S., Toxicology, University of Maryland, 1981  
Ph.D., Toxicology, North Carolina State University, 1988

**Chronology of Employment:**

1981 – 1983 - Northrop Services Inc.  
Research Triangle Park, NC 27709

1983 – 1985 - Environmental Health Research Testing, Inc.  
Research Triangle Park, NC 27709

1985 – 1989 - National Institute of Environmental Health Sciences  
Research Triangle Park, NC 27709

1989 – Present - State Environmental Toxicologist  
State of North Carolina  
Department of Health and Human Services  
Division of Public Health  
Occupational and Environmental Epidemiology Branch  
Raleigh, NC  
Current Work Phone Number: (919) 707-5911

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**Bibliography**

Nesnow S, Rudo KM, Bryant B, and Easterling RE. Reanalysis and clarification of the structures of alpha-naphthoflavone dihydrodiols formed by uninduced and induced rat liver microsomes from Charles River CD and Sprague Dawley rats. *Carcinogenesis* 4, 425-430, 1983.

Rudo KM, Ellis S, Bryant BJ, Lawrence K, Curtis G, Garland H, and Nesnow S. Quantitative analysis of the metabolism of benzo(a)pyrene by transformable C3H10T1/2CL8 mouse embryo fibroblasts. *Teratogenesis, Carcinogenesis, and Mutagenesis* 6, 307-319, 1986.

Siegfried JM, Rudo KM, Bryant BJ, Ellis S, Mass M, and Nesnow S. Metabolism of benzo(a)pyrene in monolayer cultures of human bronchial epithelial cells from a series of donors. *Cancer Research* 46, 4368-4371, 1986.

Rudo, KM, Meyers WC, Dauterman W, and Langenbach R. Comparison of human and rat hepatocyte metabolism and mutagenic activation of 2-acetylaminofluorene. *Cancer Research* 47, 5861-5867, 1987.

Langenbach R, Rudo, KM, Ellis S, Hix C, and Nesnow S. Species variation in bladder cell and liver cell activation of acetylaminofluorene, *Cell Biology and Toxicology* 3, 303-319, 1987.

Mohapatra N, Macnair P, Bryant BJ, Ellis S, Rudo, KM, Sangaiah R, Gold A, and Nesnow S. Morphological transforming activity and metabolism of cyclopenta-fused isomers of benz(a)anthracene in mammalian cells. *Mutation Research* 188, 323-334, 1987.

Langenbach R and Rudo KM. Human hepatocyte and kidney cell metabolism of 2-acetylaminofluorene and comparison to the respective rat cells. *Cell Biology and Toxicology* 4, 453-465, 1988.

Rudo KM, Dauterman W, and Langenbach R. Human and rat kidney cell metabolism of 2-acetylaminofluorene and benzo(a)pyrene. *Cancer Research* 49, 1187-1192, 1989.

Crespi CL, Langenbach R, Rudo KM, Chen YT, and Davies RL. Transfection of a human cytochrome p-450 gene into the human lymphoblastoid cell line, AHH-1, and the use of the recombinant cell line in gene mutation assays. *Carcinogenesis* 10, 295-301, 1989.

Davies RL, Langenbach R, Rudo KM, Turner TR, and Crespi CL. Expression of human genes for a cytochrome p-450 and an epoxide hydrolase in a human lymphoblastoid cell line. *Carcinogenesis* 10, 885-891, 1989.

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Curriculum Vitae  
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Hansen, SK, Ross JA, Siegfried JM, Leavitt S, Rudo K, Langenbach R, and Nesnow S. Transfection of a rat cytochrome P450b cDNA into C3H10T1/2 C28 mouse embryo fibroblasts. *Molecular Carcinogenesis* 2, 261-267, 1989.

Rudo KM, and Langenbach R. Comparative metabolism of 2-acetylaminofluorene and benzo(a)pyrene by human and rodent cells. *The Nucleus* 31, 87-89, 1990.

Kari FW, Driscoll SM, Abu-Shakra A, Strom SL, Jenkins WL, Volosin JS, Rudo KM, and Langenbach R,. Comparative metabolism and genotoxicity of the structurally similar nitrophenylenediamine dyes, HC Blue 1 and HC Blue 2, in mouse hepatocytes. *Cell Biology and Toxicology* 6, 139-155, 1990.

Taylor T and Rudo KM. Risk assessment of dioxin contaminated fish. Environmental Epidemiology Section, Division of Epidemiology, Department of Environment, Health, and Natural Resources, Raleigh, North Carolina, 1-34, April 1990.

Rudo K and Smith CG. Evaluation of Environmental Sampling Results – Carolina Solite Corporation. Environmental Epidemiology Section, Division of Epidemiology, Department of Environment, Health, and Natural Resources, Raleigh, North Carolina, p. 1-16, April 1991.

Rudo K. Methyl Tertiary Butyl Ether (MTBE) – Evaluation of MTBE Carcinogenicity Studies. *Toxicol. Ind. Health* 11 (2), 167-173, 1995.

Rudo K, Pate WJ, and Smith CG. The public health impact of the oxygenated fuels program in North Carolina. Occupational and Environmental Epidemiology Section, Division of Epidemiology, North Carolina Department of Environment, Health, and Natural Resources, Raleigh, North Carolina, p. 1-8, July 1995.

Rudo KM. Human and rat liver S9, microsomal, and hepatocyte metabolism and mutagenesis of 2-acetylaminofluorene. *Toxicology and Applied Pharmacology* (in preparation).

Rudo KM. Review of the Wisconsin DHSS report on health concerns attributed to reformulated gasoline use in southeastern Wisconsin. *Toxicol. Ind. Health*, 11(5), 463-466, 1995.

Moore JA and IEHR Expert Scientific Committee. An assessment of lithium using the IEHR evaluative process for assessing human developmental and reproductive toxicity of agents. *Reprod. Tox*, 9(2), 175-210, 1995.

Rudo KM, Pate WJ, and Smith CG. The public health impact of the oxygenated fuels program in North Carolina. *The Toxicologist* 15(1), 140, 1995.

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Curriculum Vitae  
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Rudo KM. The oxygenated fuels program in North Carolina: A public health risk assessment. *The Toxicologist*, 16(1), abstract #747, 1996.

### **Book Chapters**

Cyclopenta-fused isomers of benz(a)anthracene: II. Mutagenic effects on mammalian cells, in: A. J. Dennis and M. Cooke (Eds.), *Polynuclear Aromatic Hydrocarbons*, Vol. 8, Battelle Press, Columbus, Ohio, pp. 949-960, 1985.

Cyclopenta-fused isomers of benz(a)anthracene: I. Identification of the major microsomal metabolites, in: A. J. Dennis and M. Cooke (Eds.), *Polynuclear Aromatic Hydrocarbons*, Vol. 8, Battelle Press, Columbus, Ohio, pp. 1151-1172, 1985.

Metabolic activation pathways of cyclopenta-fused PAH and their relationship to genetic and carcinogenic activity, in: C. Ramel, B. Lambert, and J. Magnusson (Eds.), *Progress in Clinical and Biological Research*, Vol. 209A, *Genetic Toxicology of Environmental Chemicals, Part A: Basic Principles and Mechanisms of Action*, Alan R. Liss, New York, pp. 515-522, 1986.

Biological activity and metabolism of aceanthrylene and acephenanthrylene, in: A. J. Dennis and M. Cooke (Eds.), *Polynuclear Aromatic Hydrocarbons*, Vol. 9, Battelle Press, Columbus, Ohio, pp. 795-810, 1986.

Human and animal hepatocyte xenobiotic metabolism, in: S. Sharma (Ed.), *Current Developments in Cell Genetics*, Oxford & IBH Publishing Co., New Delhi, India, pp. 73-88, 1989.

Species comparisons regarding comparative metabolism of two structurally similar phenylenediamines (HC Blue 1 and HC Blue 2), in: *Mutation and the Environment, Part D*, Wiley-Liss, Inc., New York, pp. 305-314, 1990.

Transfection of cytochrome P-450 cDNAs into mammalian cells used in mutation and transformation assays, in: *Mutation and the Environment, Part D*, Wiley-Liss, Inc., New York, pp. 239-248, 1990.



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**Memberships – Committees and Societies**

- Secretary's Scientific Advisory Board on Toxic Air Pollutants
- North Carolina Pesticide Board's Interagency Working Group
- Health Effects Institute Advisory Panel on Oxygenates
- ASTHO Review Panel for the Wisconsin DHSS Oxygenates Report
- Federal and State Toxicology and Risk Assessment Committee (FSTRAC)
- North Carolina Society for Risk Analysis
- North Carolina Society of Toxicology
- Institute for Evaluating Health Risks Expert Scientific Committee

**Exhibit B**

**MTBE References**

1. Belpoggi et.al., Toxicol.Ind.Health 11:119-149, 1995.
2. Chun et.al. : Bushy Run Research Center, Export, PA, 1992.
3. Burleigh-Flayer et.al. : Bushy Run Research Center, Export, PA, 1992.
4. Hiremath and Parker : Toxicologist : 14(1) : 152, 1994.
5. Bird et.al., J.Appl.Toxicol. : 17: s45-s55, 1997.
6. Belpoggi et.al., Eur.J.Oncol: 3: 201-206, 1998.
7. McGregor D. Crit.Rev.in Toxicology, 36:319-358, 2006.
8. Vojdani et.al., Hum Exp.Toxicol: 16 :485-494, 1997
9. Prah et.al., Toxicol.Sci.: 77: 195-205, 2004.
10. Williams-Hill et.al.: Mutation Res.: 446 : 15-21, 1999.
11. Mehlman, MA, Toxicol.Ind.Health : 12:613-627, 1996.
12. Rudo, KM, Toxicol.Ind. Health : 11: 167-173, 1995.
13. Miller et.al., J.Appl. Toxicol. : 17: s3-s12, 1997.
14. Mackerer et.al.: Proc.Soc.Exp.Biol.Med.: 212 : 338-341, 1996.
15. Du et.al.: Environ.Toxicol.: 20 : 397-401, 2005
16. Moolenaar et.al., Arch.Env.Health : 49(5): 402-409, 1994.
17. Belpoggi et.al., Ann.NY Acad.Sci.: 837 : 77-95, 1997.
18. ATSDR Toxicological Profile of Methyl Tertiary-Butyl Ether, 1996
19. Williams-Hill et.al., Mutation Res.:446: 15-21, 1999
20. Du et.al., Environ. Toxicol.,: 20: 397-401, 2005
21. Mackerer et.al.,Proc.Soc.Exp.Biol.Med.: 212: 338-341, 1996
22. Tang et.al., Clin.J.Prev.Med.: 31: 334-337, 1997
23. Lee et.al., Toxicol.Sci.: 42(suppl): 187, 1998
24. ARCO(1980) Methyl Tertiary Butyl Ether: Acute Toxicological Studies.ARCO Chemical Company, Glenolden, PA.
25. Zhou et.al., J.Environ.Pathol.Oncol.: 16: 35-39, 2000